

Question Paper Code : 85018

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

First Semester

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Computer Science and Engineering

CS25C01 — COMPUTER PROGRAMMING C

(Common to : Biomedical Engineering/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/Computer Science and Engineering (Data Science)/Computer Science and Engineering (IoT)/Computer and Communication Engineering/Electrical and Computer Engineering/Electrical and Electronics Engineering/Electrical and Electronics Engineering (Training Integrated)/Electronics Engineering (VLSI Design and Technology)/Electronics and Communication Engineering/Electronics and Computer Engineering/Medical Electronics/Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2025)

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Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. **Mention any two characteristics of a good algorithm.**
2. **Compare between entry controlled and exit controlled loop.**
3. **Differentiate between local and global variables.**
4. **Write the general syntax for a multi-dimensional array and its initialization.**
5. **How will you copy one string into another without using library functions?**
6. **Compare between static and dynamic memory.**
7. **What is union? How to define it?**
8. **Present the syntax of initializing a structure at the time of declaration.**

- 9. State the purpose of using `rewind ()` in file handling.
- 10. List two advantages of using user-defined header files.

PART B — (5 × 16 = 80 marks)

- 11. (a) Explain the basic structure of a C program in detail with an example. Describe documentation section, Link section, definition section, global declaration, main () function and subprograms.

Or

- (b) Describe bitwise operators in detail. Explain AND, OR, XOR, NOT, left shift and right shift operations with binary examples.
- 12. (a) Explain in detail the looping constructs : for, while and do-while. Compare them and write example programs.

Or

- (b) Discuss in detail about the selection statement in C : if, if-else, nested if, switch. Give suitable C programs.

- 13. (a) (i) Write a C program to find greatest common divisor using recursive function. (8)
- (ii) Discuss about the scope and lifetime of variables. (8)

Or

- (b) Illustrate in detail about call by value and call by reference with an example.
- 14. (a) (i) Compare and contrast structure and union with examples. (8)
- (ii) Explain about enum datatype in C with an example of days of a week. (8)

Or

- (b) Write a C program using pointers to structures to insert and update employee details using array of structure.
- 15. (a) Compare and contrast between text files and binary files. Write C programs for reading and writing in both formats.

Or

- (b) Explain the entire process of modular programming : splitting code, creating headers, linking and reuse with an example program.